APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): September 13, 2007

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Detroit District; Evergreen Memorial Cemetery; LRE-1990-1450564

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: INDIANA County/parish/borough: LAKE COUNTY City: HOBART
Center coordinates of site (lat/long in degree decimal format): Lat. 41.541867° **N**, Long. 87.304944° **W**.
Universal Transverse Mercator:
Name of nearest waterbody: BOTHWELL LATERAL No. 6
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: LITTLE CALUMET RIVER
Name of watershed or Hydrologic Unit Code (HUC): 8-Digit HUC 04040001 LITTLE CALUMET-GALIEN/ 11-Digit HUC 04040001030 Deep River/Turkey Creek
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: September 13, 2007
☒ Field Determination. Date(s): November 9, 2006

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:
.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply): [1]
☐ TNWs, including territorial seas
☐ Wetlands adjacent to TNWs
☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
☒ Non-RPWs that flow directly or indirectly into TNWs
☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☒ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☐ Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:
Non-wetland waters: Bothwell Lateral No. 6, approximately 1,600 linear feet: 2' to 8' width (ft) and/or acres.
Wetlands: 47 acres.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manual**
Elevation of established OHWM (if known):not known.

2. Non-regulated waters/wetlands (check if applicable):[3]

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: .

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: Bothwell Ditch upstream of project site--probably less than 5 square miles; Bothwell Ditch downstream of project site--maybe another 5-7 square miles to confluence with Turkey Creek. Turkey Creek's watershed is 124 **square miles**
Drainage area: likely < 5 **square miles**
Average annual rainfall: 36 inches
Average annual snowfall: 27 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **20-25** river miles from TNW.
Project waters are **5-10** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Bothwell Lateral #6 flows through the review area, to Turkey Creek (RPW). Portion of Bothwell Lateral #6 is routed through a culvert under I-65 where it likely displays intermittent flow more so than seasonal or perennial flow. Turkey Creek empties into the Deep River (RPW) to form a third order tributary to Lake George, from there the Deep River becomes a distributary and flows into the Little Calumet River also known as Burns Waterway, a navigable water of the U.S. that flows into Lake Michigan via the Burns Ditch (also a navigable water of the U.S.). Flow is initially westward from site, then south into Turkey Creek, which flows eastward into the Deep River, which loops east, then northward, then west and north again before joining the Little Calumet River/Burns Waterway
.

Tributary stream order, if known: Bothwell Lateral is essentially a first order tributary.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural

☒ Artificial (man-made). Explain: Bothwell Lateral #6 apparently created in early 1900s, has been extensivley altered since.

☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):

Average width: Unknown on project site; however, downstream of site varies from about 2 up to 12 (twin 6' box culverts) feet

Average depth: varies feet

Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .

Presence of run/riffle/pool complexes. Explain: .

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): very shallow on project site, relatively steep downstream to Turkey Creek %

(c) Flow:

Tributary provides for: **Intermittent but not seasonal flow**

Estimate average number of flow events in review area/year: **11-20**

Describe flow regime: may exhibit continuous seasonal flow late fall through winter and early spring; however, more likely flow is discontinuous at times, especially during extended dry periods; so, a more fitting description is "seasonal and intermittment flow"; would expect peak flows to be tied to heavier rain events and snow melts.

Other information on duration and volume: .

Surface flow is: **Discrete.** Characteristics: No defined bed or bank in review area, Ditch is wholly or partially inundated most of the time by wetlands on project site.

Subsurface flow: **Yes**. Explain findings: Subsurface in that flow downstream of the site routes through large underground box culverts/storm drains.

☐ Dye (or other) test performed: .

Tributary has (check all that apply):

☒ Bed and banks

☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☒ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☐ other (list):	

☒ Discontinuous OHWM.[7] Explain: On project site, the Bothwell Lateral is, quite often, inundated or nearly inundated. Downstream of the site the lateral is confined by ditch banks and/or large culverts..

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

- ☒ High Tide Line indicated by:
  - ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☒ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: .

Identify specific pollutants, if known: .

[7] Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: Site is adjacent/near to several larger, private, conservancy or National Park Service holdings, and state lands east and south of the site and adjacent to other wetlands west of I-65. Site is part of a relatively large "island" of wetlands surrouneded by urban areas and farmland.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:47 acres
Wetland type. Explain: Palustrine Emergent/Scrub-Shrub/Aquatic Bed .
Wetland quality. Explain:USFWS described site in 25 Oct 2005 P.N. response as "can be considered one of the most significant natural areas in Indiana" .
Project wetlands cross or serve as state boundaries. Explain: No.

(b) General Flow Relationship with Non-TNW:
Flow is: **Perennial flow**. Explain: Bothwell Lateral #6 is routed through the wetland.

Surface flow is**: Discrete**
Characteristics: Acts a a catch basin and stores water.

Subsurface flow: **Unknown**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **20-25** river miles from TNW.
Project waters are **1-2** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **20 - 50-year** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Water color was fairly clear with areas of algae/pond scum and floating duckweed on the surface.
Identify specific pollutants, if known: The wetlands receive run-off from surrounding urban and agricultural lands, so it recieves inputs of pollutants typically associated with such settings.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☒ Vegetation type/percent cover. Explain: Approx. 50:50 open water and emergent vegetation.
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings:USFWS 25 Oct 2005 response to P.N. listed 12 Indiana endangered/threatened/or special concern species seen in project area (per the USFWS, the "Hobart Marsh ecosystem"). The FWS and EPA have identified weltands in the review area as an Aquatic Resource of National Importance (ARNI). FWS has provided a list of over 80 species of wildlife that have been observed at the site, or are known and/or expected to nest or breed in the project area. Some of these species are State Endangered, Threatened, or of Special Concern within Indiana. In addition, the wetland complex also provides habitat to species that are considered Fish and Wildife Resource Conservation Priorities of Region 3 U.S. FWS.
☒ Aquatic/wildlife diversity. Explain findings: Site is a hemi-marsh adjacent to several other large tracts of undeveloped land, all surrounded by urban development and agricultural land; as such, it provides year-round as well as migratory habitat for a great number of species that cannot otherwise exist or even rest in the surrounding area.

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **4**

Approximately (261) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Project site		Y	Approx. 47
Spangler Fen Nature Preserve east of subject wetlands (USFWS termed this area "headwaters of Hobart Marsh")		Y	Approx. 80
Property south of review area connected via railroad culvert (Includes property of the McCoskey Bur Oak Savanna State Nature Preserve)		Y	Approx. 90
Property west of I-65 connected via culvert.		Y	Approx. 44

Summarize overall biological, chemical and physical functions being performed: As noted in places above, the wetlands on the project site are part of a much larger complex of wetlands in the immediate areas east, south, and west of the project site. The wetlands desynchronize flood flows in a region that has flooding issues. The wetlands receive and filter/retain pollutants in the runoff from surrounding urban and agricultural areas. The project site wetlands provide habitat for a relatively large number of wildldife, including many migratory birds. The wetlands are part of the Deep River/Turkey Creek watershed and play a more than insubstantial role in mitigating effects on the biological, chemical, and physical integrity of the Little Calumet River.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

? Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?

? Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?

? Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?

? Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: 2. The project site is tucked in between: the Little Calumet River about 2 miles to the north; Turkey Creek less than 2 miles to the south; and bound by the Deep River to the east, north, and southeast any where from 1.5 miles to 2.6 miles away. Despite being surrounded by the above-mentioned watercourses, the project site is some 30-40 feet higher than these nearby waterbodies, which, relative to the landscape of northern Lake County, Indiana, allows for very fast drainage of water--drainage facilitated by the Bothwell Lateral #6. In general, the landscape of the area--glacial moraines and beach ridges--is not conducive for

fast drainage of water (IN Geological Survey Special Report 11, 1975). The Bothwell Lateral #6 was one of numerous ditches and drains installed throughout Lake County to enable development and agriculture.

3. As noted above, Bothwell Lateral #6 is a tributary to Turkey Creek, which empties into the Deep River and Lake George (an impoundment of the Deep River). The Deep River is a tributary to the navigable Little Calumet River, which, in turn flows out to Lake Michgan via the Burns Waterway. The Chicago District, Corps of Engineers is responsible for dredging a portion of the Burns Waterway.
4.
5. Turkey Creek, Deep River and Lake George are all identified on Indiana's 2008 303 (d) List of Impaired Waters due to water quality concerns related to E. coli, siltation and impaired biological communities. To address the local water quality issues, the Deep River/Turkey Creek Watershed Management plan was developed in June 2002 for the City of Hobart. The goals of the plan are to protect Lake George from future sediments and pollution, and to improve water quality in upstream tributaries through a combination of wetland protection, erosion controls, and zoning and development regulations. The issue of high concentrations of E.coli continue downstream from the Turkey Creek watershed all the way to Lake Michigan.
6.
7. The following quote from a 2003 report sums up the issue of E. coli concentrations along the shoreline of Lake Michigan in northern Indiana:
8.
9. "The Indiana shore includes Indiana Dunes National Lakeshore as well as several other beaches that are used extensively by residents of Indiana and other Midwest states. The shoreline is listed on the Indiana 303(d) list of impaired waters for failing to fully support its designated swimmable use due to Escherichia coli (E. coli) impairment (Table 1). The E. coli impairment was identified through data collected by the Indiana Department of Environmental Management (IDEM) and the Inter-Agency Technical Task Force on E. coli (Task Force) that showed violations of the water quality standard. E. coli is a bacterium that indicates the presence of human sewage and animal manure. It can enter water bodies through direct discharge from mammals and birds, from agricultural and storm runoff carrying mammal waste (manure), and from sewage leaked into the water. E. coli is also an indication of the possible presence of other disease causing organisms or pathogens. Violations of the water quality standard resulted in an average of more than 15 beach closures per year at the National Seashore and state park during the 1990 to 2000 period. These beach closures have been associated with adverse recreational and economic costs to the locality" (Tetra Tech, Inc. 2003, report prepared for the IDEM).
10.
11. A 2004 report completed for the IDEM (Earth Tech 2004) reiterated the "nonpoint" nature of E.coli levels in Burns Waterway: "The major source of the E. coli bacteria impairment in the Little Calumet – Portage Burns Waterway appears to be nonpoint sources. Nonpoint sources most likely to be contributing to the impairment of water quality include: failing septic systems, unknown illicit discharges of sewage, wildlife, small agriculture operations, bacteria laden sediments, and urban runoff. Point sources are well below water quality standards. Therefore, point sources of E. coli make up such a small percent of the total load that further reductions would not significantly improve water quality. CSOs [Combined Storm Overflow] are a known source of E. coli and play a major role in the water quality impairment when they occur. However, CSOs did not coincide with the dates of the simulated events, indicating that the waterbody was impaired by other sources in addition to CSOs." This report identified the Deep River and its watershed as one of the Burns Waterway's major sources of E. coli (E. coli that end up in lake Michigan as noted above).
12.
13. This above-noted scenario suggests that E. coli contamination in the Little Calumet River/Burns Waterway is not a point source problem that can be resolved by "fixing" outfalls. The presence of excessive levels of E. coli in the Little Calumet River/Burns Waterway is more likely due to a combination of run-off from unknown illicit discharges of sewage, agriculture operations, bacteria laden sediments, and urban runoff, and faulty septic fields in the watershed. A 2000 report from the Indiana Geological Survey suggests that E. coli concentrations move through the downstream portion of the Burns Waterway as distinct contaminant plumes, which suggests much of the E. coli contamination gets into the watershed in the form of storm event runoff. The wetlands already located in the watershed prevent additional E.coli-laden run-off—and especially large pulses of run-off during storm events—from reaching Turkey Creek, the Deep River, the Burns Waterway, and Lake Michigan. The elimination of any of these wetlands will not assist in the attainment of the IDEM's total maximum daily load (TMDL) for E. coli on the Little Calumet River, the Burns Waterway, and Lake Michigan.
14.
15. The main branch and eastern branches of the Burns Waterway are designated salmonid waters with public fishing access. It is one of the closest salmonid waters for people from Chicago to use. Sediments and high water levels brought on by storm events can impede the ability to fish the Burns Waterway. Wetlands such as found in the project area, adjacent to tributaries of the Deep River do moderate the quantity of storm flow into the Deep River/Lake George/Burns Waterway and do reduce the sediment load into all of these waterways. Public monies are being spent to stock Burns Waterway with salmon and steelhead. The wetlands in the Bothwell Lateral #6 help provide a return on this investment without additional expenditure of public monies.
16.
17. The wetlands on the project site also retain/desynchronize flood flows into Turkey Creek and, as such, into the Deep River and the Little Calumet River/Burns Waterway. This watershed has a well-documented history of flooding and much public monies have been expended addressing flooding and sedimentation issues. The development of the above-noted Deep River/Turkey Creek Watershed Management plan was mandated in the 1996 Water Resources Development Act:
18. SEC. 530. WATERSHED MANAGEMENT PLAN FOR DEEP RIVER BASIN, INDIANA.
19. (a) DEVELOPMENT- The Secretary, in consultation with the Natural Resources Conservation Service of the Department of Agriculture, shall develop a watershed management plan for the Deep River Basin, Indiana, including Deep River, Lake George, Turkey Creek, and other related tributaries in Indiana.
20. (b) CONTENTS- The plan to be developed by the Secretary under subsection (a) shall address specific concerns related to the Deep River Basin area, including--

21. (1) sediment flow into Deep River, Turkey Creek, and other tributaries;
22. (2) control of sediment quality in Lake George;
23. (3) flooding problems;
24. (4) the safety of the Lake George Dam; and
25. (5) watershed management.
26.
27. The wetlands adjacent to Bothwell Lateral #6 contribute to the attainment of the goals in this Federally-prescribed watershed management plan. The more regional Watershed Management Plan for Lake, Porter, and LaPorte Counties (NIRPC, 2005) likewise (broadly) recommends protecting wetlands, such as the wetlands adjacent to Bothwell Lateral #6, as a means of attaining the water quality improvements in the 3-County region.

28. As noted above in Section B.2.iii, this project site is part of the Hobart Marsh. The Chicago District, U.S. Army Corps of Engineers is implementing a mitigation project on adjoining portions of Hobart Marsh to help mitigate wetland impacts associated with the Little Calumet River flood control project. The Chicago District has stated they expect their mitigation work--involving wetlands in the same landscape setting and area as the project site--"will also expand, buffer and connect three important natural areas, help to recharge the shallow aquifer, eliminate agricultural chemical loadings and reduce runoff to Turkey Creek, Lake George and the Deep and Little Calumet Rivers" (see: http://www.lrc.usace.army.mil/projects/little_cal/land.htm). The Chicago District has identifed the significant nexus of the wetlands on the project site with downstream navigables waters.
29.
30. The nexus between Bothwell Lateral #6 and the Little Calumet River/Burns Waterway/Lake Michigan is significant and public monies are being spent to counteract the negative aspects of this significant nexus (e.g., flooding on the Deep River and Lake George, E. coli levels in Lake Michigan, sediment loads in the Deep River, Little Calumet River, Burns Waterway). Bothwell Lateral #6 and its adjacent wetlands do play a significant role in the chemical, physical, and biological integrity of the Little Calumet River, Burns Waterway, and Lake Michigan.
31.
32. Earth Tech, 2004. Little Calumet River and Portage Burns Waterway TMDL for E.coli Bacteria, 64 pp. report prepared for the IDEM
33. (http://www.in.gov/idem/files/tmdl_littlecal_report.pdf)
34.
35.
36. Tetra Tech, Inc. 2003. Lake Michigan Shoreline TMDL for E. coil Bacteria Modeling Framework Report, 15 pp. report prepared for the IDEM
37. (http://www.laportecountybeaches.com/resources/pdf/lkmichTMDLfrmwrk.pdf)
38.
39. The Deep River/ Turkey Creek Watershed Management Plan June 30, 2002
http://www.city.hobart.in.us/16111065145437387/lib/16111065145437387/Cover_-_Acknowledgements_-_Table_of_Contents.pdf
and http://www.city.hobart.in.us/16111065145437387/lib/16111065145437387/Section_VIII_-DRTC_Watershed_Plan_-_Goals.pdf
40.
41. Harper, D. and G. Olyphant 2000. Monitoring and Forecasting Outfalls of Streamflow Contaminated by E.coli at the Portage-Burns Waterway ("Burns Ditch"), Lake Michigan, Indiana. Indiana Geological Survey report
42. http://www.igs.indiana.edu/survey/projects/burns_web/burnsditch_web/burnhtml/index.cfm
43.
44. House Report 104-843 - WATER RESOURCES DEVEOPMENT ACT OF 1996 http://www.congress.gov/cgi-bin/cpquery/?&sid=cp104qnr3E&refer=&r_n=hr843.104&db_id=104&item=&sel=TOC_389684&
45.
46. Northwestern Indiana Regional Planning Commission 2005. Watershed Management Plan for Lake, Porter, and LaPorte Counties Final Report. 100 pp. http://www.nirpc.org/environment/pdf/Watershed%20Plan.pdf .

47. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

48. .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

     .

   - ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows

seasonally: Flow from the project site south through a culvert in a RR right-of-way and then southwesterly to and through a culvert under I-65 was documented during field inspections conducted on February 6, 2002 and November 9, 2006. The culvert through which the ditch is conveyed under I-65 was appaerrntly installed at a higher elevation than the aforementioned culvert under the RR right-of-way upstream--suggesting that pronounced strong seasonal flow from the project site to points west of I-65 may not always be possible. Flow in the Bothwell Lateral #6 downstream of I-65 is likely more seasonal than intermittent--it is noted in the USGS topograpical map of the area as a perrenial and intermittent stream. The underground portions of the Bothwell Lateral #6 are relatively large--twin 5' by 5' and twin 6' by 6' box culverts--such size suggests peak flows in the ditch can be of a very large volume. The 26 October 2005 USFWS response to our P.N. indicated the Hobart Marsh, of which the project site is part of and through which the Bothwell Lateral #6 was constructed, is fed by springs and seeps from higher areas just east of the project site This suggests flow in the Bothwell Lateral #6 is could be more persistent seasonally than a watercourse without groundwater inputs. In February 2002, the Corps documented continuous flow from the project site all the way to Turkey Creek.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **Approx. 1,600** linear feet **unknown** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☒ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☒ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: Bothwell Lateral #6 was routed through the project site's wetlands as an open ditch and it appears to be completely inundated or at least partially inundated by the wetlands.

Provide acreage estimates for jurisdictional wetlands in the review area: **47** acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☒ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: **47**acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☒ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:1:24,000; Crown Point, NW, IN.

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[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:USFWS.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):April 15, 2002.
or ☐ Other (Name & Date): .
☒ Previous determination(s). File no. and date of response letter: 90-145-05-3 .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):

Purdue University web based hydrualic map (HYMAPS-OWL)
EPA ltr. dtd. 28 Oct 05;
FWS provided information per letter dtd. Oct 2005.
w/Attachments: - Map of Hobart Marsh area;
- Ltr. from Lake County Drainange Board dtd. 27 Jan. 94 w/Sanitary District Sewer maps;
- List of Wildlife of the Hobart Marsh Ecosystem;
- Aerial photo dtd. 20 Nov 03 of Hobart Marsh Real Estate Tracts;
- Deep River/Turkey Creek Watershed Managemet Plan dtd 30 June 02

COE site inspections 6 Feb 2002 and 9 Nov 2006
Hey and Associates Nov 2001 investigation of the project site
Indiana Department of Natural Resources Geological Survey Special Report 11. 1975. Environemntal Geology of Lake and Porter Counties, Indiana-An Aid to Planning. 57 pp.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .